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BEST POSTERS AWARDS

ASSOCIATION OF SCLEROSTIN SERUM LEVELS WITH THE SEVERITY OF AORTIC VALVE CALCIFICATION

ACC Poster Contributions
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Background: Sclerostin is a key regulator of bone formation. Recently, sclerostin was identified for the first time in human aortas at the protein level. We hypothesized that sclerostin may also play a potential role in the pathogenesis of aortic valve calcification (AVC). Therfore, the aim of the present study was to investigate the relationsship between sclerostin serum levels in patients with different degrees of aortic valve calcification assessed by dual-source computed tomography (DSCT) compared to a healthy control group.

Methods: A prospective cross-sectional study in 115 patients (mean age 71 ± 7 years, 75 men) with echocardiographically proven aortic valve disease was performed. In all patients sclerostin serum levels were measured by ELISA (Tecomedical, Bünde, Germany) and compared to values obtained from a healthy control population (n=57, mean age 48 ± 20 years, 17 male). For quantification of AVC all patients of the study cohort underwent non contrast-enhanced DSCT (Definition, Siemens, Germany with scan parameters as follows: 2x64x0.6mm collimation, tube voltage 120KV, 380mAs tube current). The patients were stratified according to the median of sclerostin (cut-off 0.83 ng/mL) into 2 groups.

Results: Patients with AVC showed significantly higher sclerostin serum levels as compared to healthy controls (0.94 ± 0.45 vs. 0.58 ± 0.26 ng/mL, p<0.001). A significant correlation between sclerostin serum levels and Agatston AVC scores assessed by DSCT was observed (r=0.62, p<0.001) in the study cohort. Patients with high sclerostin serum levels above the median (n=57) showed significantly higher Agatston AVC scores (2095 ± 1447) compared to patients with low sclerostin serum levels (n=58; 601 ± 545, p<0.001).

Conclusions: Patients with AVC showed increased sclerostin serum levels compared to a healthy reference population. In addition, the severity of AVC may be linked to increased sclerostin serum levels. Thus, the present study suggests a potential role for sclerostin in the pathogenesis of AVC. Further studies are needed to evaluate if sclerostin may become a suitable biomarker for aortic valve calcification.